THE NATIONAL GEOGRAPHIC MAGAZINE

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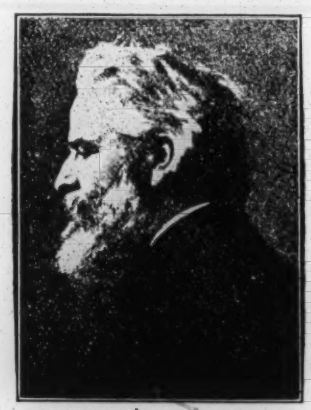

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VOL. XII, No. 11 WASHINGTON NOVEMBER, 1901

THE NATIONAL GEOGRAPHIC MAGAZINE

THE SEX, NATIVITY, AND COLOR OF THE PEOPLE OF THE UNITED STATES

IN June, 1900, there were in the United States proportionally a few more females than in 1890, a greater proportion of the population was native born, and there were also proportionally more whites; or, stated conversely, there were proportionally fewer males, fewer foreigners, and fewer blacks than ten years ago.

In other words, during the past ten years the number of women has been growing slightly more rapidly than the number of men; the native born population has increased at nearly double the rate of increase of the foreign born, the foreign element having increased at less than one-third of the rate of increase of the foreign born during the preceding decade, and the number of whites has increased to quite an extent more rapidly than has the number of blacks.

These are the main conclusions derived from a study of the figures presented in a recent Census Bulletin.*

The total population of the United States on June 1, 1900, was 76,303,387, including persons enumerated at military and naval stations and naval ships abroad and in Alaska, Hawaii, Indian Territory, and Indian reservations.

* Census Bulletin No. 103.

This great total consisted of 39,059,242 males and 37,244,145 females—a majority for the males of 1,815,097. Expressed differently, of each 10,000 inhabitants 5,118 were boys and men and 4,882 were girls and women. Ten years before there were 32,315,053 males and 30,754,693 females, or of every 10,000 inhabitants 5,124 were males and 4,876 were females. The females have thus increased only a very little more rapidly than the males. In 1900, in 10,000 inhabitants there were 236 more men than women, whereas in 1890, in the same number of inhabitants, there were 248 more men than women. Expressed in percentages, there has been an increase in males of 20.9 per cent and in females of 21.1 per cent.

Of native born persons there were 65,843,302 and of foreign born 10,460,085 in 1900—that is, of every 1,000 persons in 1900, 863 were born in the United States and only 137 outside the borders of the country. In 1890, on the other hand, there were 53,761,665 native born and 9,308,091 foreign born, or of every 1,000 persons 852 were native and 148 foreign born.

During the ten years the native born increased at nearly double the rate of in-

crease of the foreign born, the former increasing 22.5 per cent and the latter only 12.4 per cent. If we exclude the foreign born counted in Hawaii, Alaska, and at military and naval stations abroad, in the United States itself the foreign element increased by only 1,091,729, or 11.8 per cent, whereas during the preceding decade it increased by 2,569,604, or 38.5 per cent—that is, during the last ten years the foreign element increased at less than one-third of its rate of increase during the preceding decade. In absolute numbers there was an addition to our native born population of 12,081,637, and to our foreign born of 1,151,994.

There are 1 Japanese, 2 Chinese, 3 Indians, 116 negroes, and 878 whites in every 1,000 of the population. It should be noted that every person of negro descent is included among the negroes. The totals of the different classes are 66,990,802 white persons, 8,840,789 persons of negro descent, 119,050 Chinese, 85,986 Japanese, and 266,760 Indians, or a total colored element of 9,312,585 persons.

The negro element thus constitutes 11.6 per cent of the total population, a slightly less percentage than in 1890, when it formed 11.9 per cent. It has not, however, been increasing so rapidly as the white population, showing an increase of only 18.1 per cent as against an increase of 21.4 per cent for the whites. The absolute increase of the whites has been 11,824,618 during the ten years, and of the negroes 1,352,001.

The different elements of which the population is composed and their respective rates of increase are clearly summarized in the following table taken from the report:

POPULATION OF THE UNITED STATES BY SEX, GENERAL NATIVITY, AND COLOR: 1890 AND 1900.

Sex, general nativity, and color.	Aggregates.		Per cent of total population.		Increase from 1890 to 1900.	
	1900.	1890.	1900.	1890.	Number.	Per cent.
Total population	76,303,387	63,069,756	100.0	100.0	13,233,631	21.0
Males	39,059,242	32,315,063	51.2	51 2	6,744,179	20.9
Females	37,244,145	30,754,693	48.8	48.8	6,489,452	21.1
Native-born	65,843,302	53,761,665	86.3	85 2	12,081,637	22.5
Foreign-born	10,460,085	9,308,091	13 7	14.8	1,151,994	12.4
White	66,990,802	55,166,184	87.8	87.5	11,824,618	21.4
Colored	9,312,585	7,903,572	12.2	12.5	1,409,013	17.8
Native white	56,740,739	46,030,105	74 4	73.0	10,710,634	23 3
Native parents	41,053,417	34,514,450	53 8	54.7	6,538,967	18.9
Foreign parents	15,687,322	11,515,655	20.6	18.3	4,171,667	36.2
Foreign white	10,250,063	9,136,079	13.4	14.5	1,113,984	12.2
Negro	8,840,789	7,488,788	11.6	11.9	1,352,001	18.1
Chinese	119,050	126,778	0.2	0.2	*7,728	*6.1
Japanese	85,986	14,399	0.1	(†)	71,587	497.2
Indian	266,760	273,607	0.3	0.4	*6,847	*2.5

* Decrease.

† Less than one-tenth of 1 per cent.

THE FOREIGN ELEMENT

In the preceding paragraphs the increase in the foreign born in the United States as a whole has been discussed, but it is interesting to inquire further into the nature of the increase. In what sections and states is the increase concentrated, how does the nationality of the immigrants of the past decade compare with the nationality of the immigrants of the preceding decade, and what is the present distribution throughout the country of our foreign born inhabitants?

Four-fifths of the increase in the number of foreigners in the United States during the past decade are found in the states constituting the North Atlantic division. Of the total increase of 1,091,729, as large a proportion as 874,619 occur in this section, while the increase in the South Atlantic division is only 7,505; in the North Central division, 98,360; in the South Central division, 35,834, and in the Western division, 75,411.

Thus of every thousand increase of foreign born 801 are concentrated in the six New England States and in New York, New Jersey, and Pennsylvania. During the preceding decade, however, the largest share in the increase of our foreign born was found in the states constituting the North Central division—Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, the Dakotas, Nebraska, and Kansas. These states then showed 44.5 per cent and the North Atlantic states 41.8 per cent of the increase in foreign born during the ten years.

In every section of the country the percentage of increase of the foreign born for the decade has greatly diminished. Even in the North Atlantic division there has been a considerable loss in this respect, the percentage of increase for the foreign born for the ten years being only 22.5 per cent as against 38.5 per cent for the preceding decade. The decrease was especially noticeable in the North Central and the Western divisions, in which the rate of increase for the foreign born fell from 39.2 and 54.2 per cent to 2.4 and 9.8 per cent respectively.

In each section also, excepting in the North Atlantic division, the rate of increase of the foreign born was less than the rate of increase of the native born. In the New England States and in New York, New Jersey, and Pennsylvania, however, the foreign born have increased a little faster than the native born—22.5 per cent as against 20.5 per cent.

THE CHANGING CHARACTER OF OUR IMMIGRATION

The remarkable change that has taken place in the character of the immigration of late years largely accounts for the recent concentration in the North Atlantic division. During 1891–1900, 3,687,564 immigrants entered the United States, one and one-half million less than in the ten years preceding. Of German immigrants during the past decade there were 505,152, whereas during the preceding ten years there were as many as 1,452,970. Norway and Sweden's contribution during 1891–1900 was 321,281 as against 568,362 during 1881–1890. The figures for Great Britain and Ireland show a similar decrease. On the other hand, Austria-Hungary, Italy, and Russia and Poland during the past decade sent over 1,846,616 immigrants, about double the number contributed by them during 1881–1890.

Thirty years ago Canada, Germany, Great Britain, Ireland, and Norway and Sweden sent 90.4 per cent of all the immigrants entering the United States, and Austria-Hungary, Italy, and Russia and Poland a scanty 1.1 per cent. In 1880 the first group were contributing 81.7 per cent and the second group 6.4 per cent; in 1890, the first, 73.9 per cent, while the second had grown to

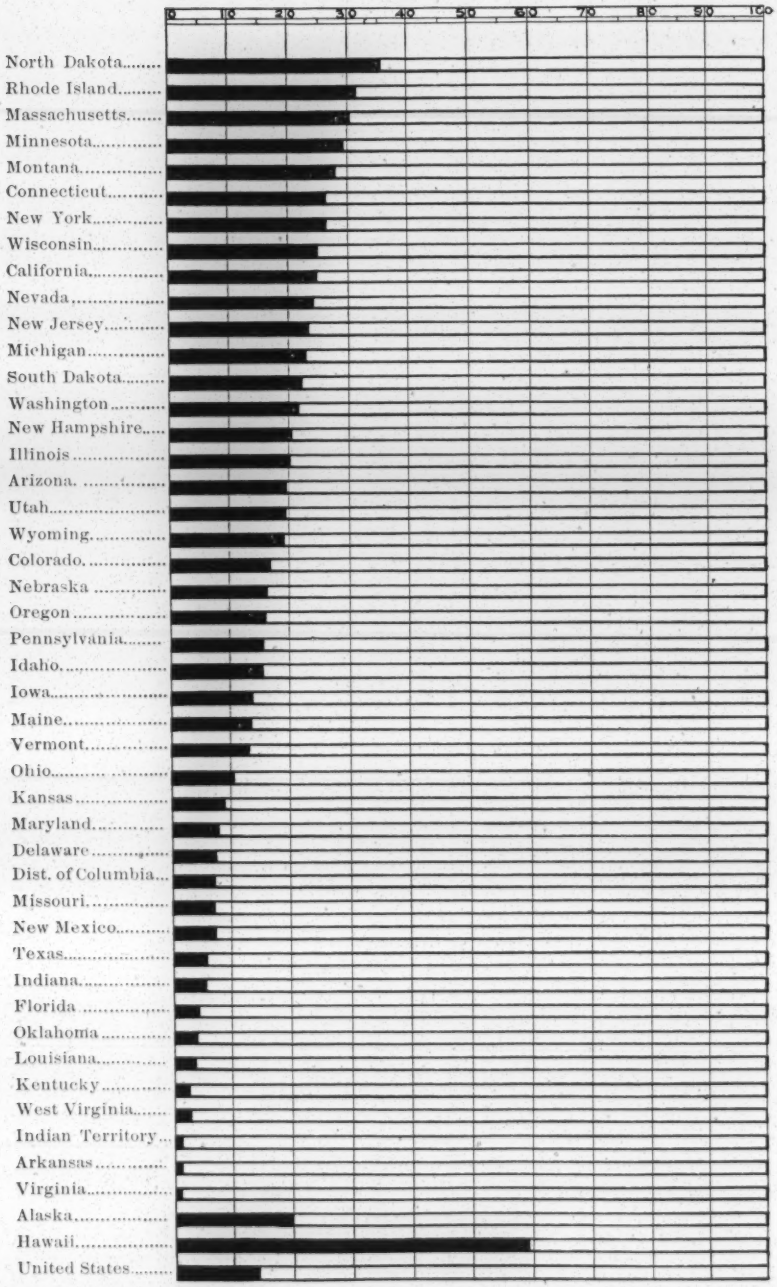


Diagram showing the Percentage of Native and Foreign Born in all States and Territories having at least One Per Cent of their Population Foreign Born

The darkened portion represents the Foreign Born

17.6 per cent. During the decade just ended the former group supplied only 40.4 per cent, while the latter furnished fully one-half, or 50.1 per cent. This new element of Poles, Italians, and Hungarians have settled in the mining districts of Pennsylvania and in the manufacturing towns of New York, New Jersey, and New England. They now form the bulk of laborers in these states, having superseded the Irish in the heavy work of digging trenches for railways or sewers and in the making and repairing of roads. No better example could be cited than the present work of digging a way for the underground system of New York City. The majority of the laborers are Italians and Poles, whereas fifteen or twenty years ago such work would have been mainly done by Irishmen.

The Census Bureau has not yet published the relative components of our foreign population, but it is interesting to note the nationalities that make up our total immigration, amounting to 19,115,221 in 80 years. Germany has contributed over one-fourth, 5,009,280; Ireland slightly more than one-fifth, 3,869,268; Great Britain one-fifth, 3,026,207; Norway and Sweden nearly one-fifteenth, 1,246,312; Canada and Newfoundland, 1,049,939; Italy, 1,040,457; Austria-Hungary, 1,027,195, and all other countries about one-tenth, 1,919,661.

Probably one-fourth of our immigrants have during the past ten years returned to their old homes. Three and one-half millions are recorded as having entered the country, but there is an increase in our foreign born population of only about one million, conclusive proof that many remain in America for only a short period.

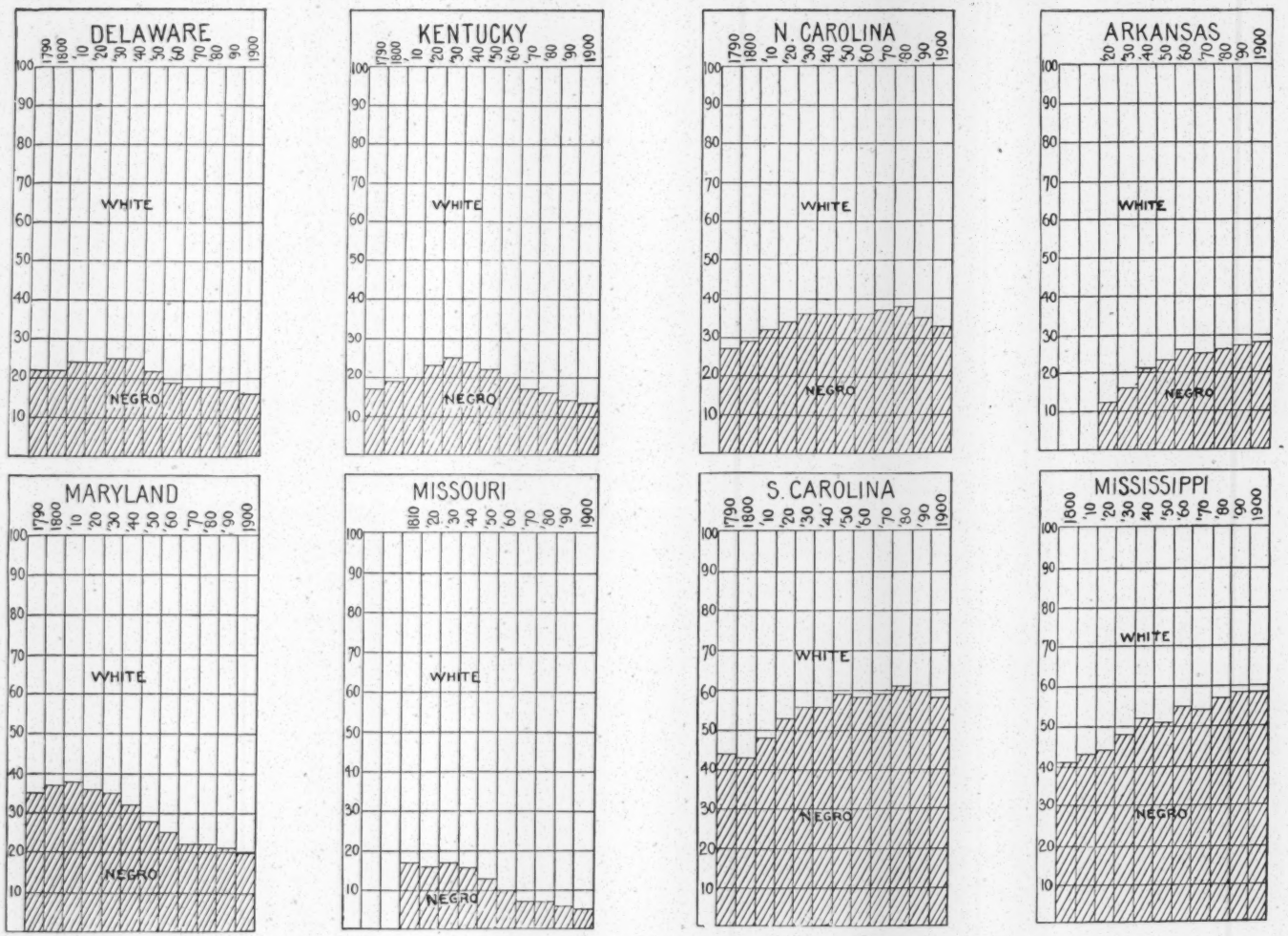
THE DISTRIBUTION OF THE FOREIGN BORN

The diagram on page 384 shows the relative percentage of foreign and native born in each state of the Union. North Dakota leads, with the largest percentage of foreign born, Rhode Island follows next, Massachusetts is third, and Minnesota fourth. These four states, together with Montana, Connecticut, and New York, are the only states that have approximately one-fourth or more of their population of foreign birth. California, Montana, and Nevada stand high up in the list because of the numerous Chinese and Japanese in these states. Six states—North Carolina, South Carolina, Mississippi, Georgia, Alabama, and Tennessee—are not included in the diagram, for each of these six states has less than 1 per cent of its population foreign born.

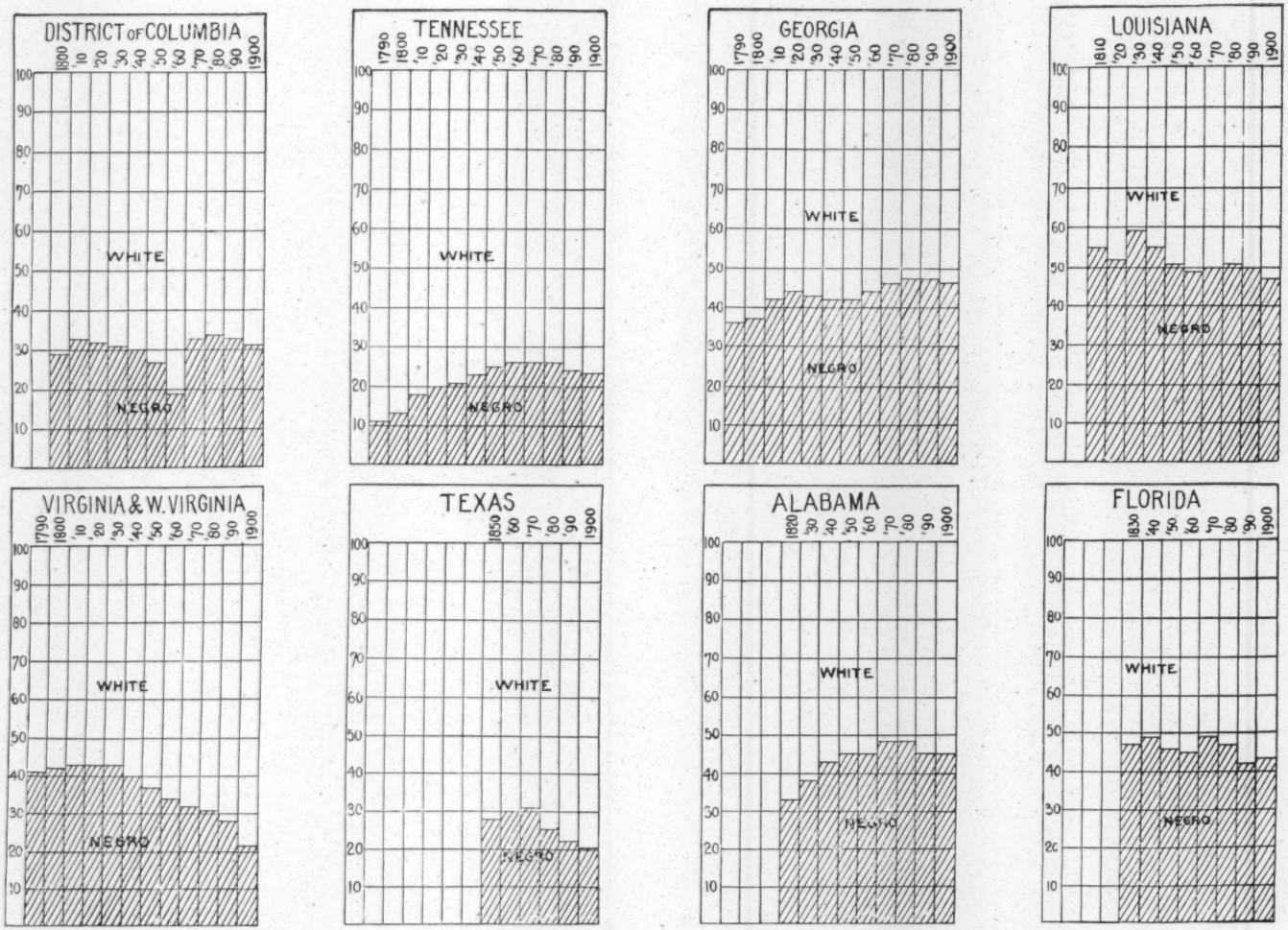
The states comprising the North Atlantic division have the largest percentage of foreign born, there being in this division 226 foreigners to 774 native-born. As has been previously noted, these are also the only states in which the foreign born have increased more rapidly than the native born during the last decade.

A natural result of the great immigration period of 1881–1890, when over half a million immigrants entered the United States annually, would be a large increase during the succeeding decade in the number of persons born in the country of foreign parents. Such, in fact, proves to be the case. In the last ten years the native whites of foreign parents have increased at the rate of 36.2 per cent, which is nearly double the rate of increase of native whites of native parentage, 18.9 per cent. For the most part, these sons and daughters born on American soil of foreign parents grow up as thoroughly American in thought and act as the descendants of the earliest settlers.

If we include in the foreign element the children of foreign white parents, the foreign element now constitutes about one-third of the total population—34 per cent. The native whites of native par-



Percentage of Whites and Negroes in Certain States at Each Census: 1790-1900



Percentage of Whites and Negroes in Certain States at Each Census: 1790–1900

entage constitute slightly more than one-half—53.8 per cent.

THE NEGRO ELEMENT

In the United States as a whole the negro element has increased since 1890 18.1 per cent, whereas the white element has increased as much as 21.4 per cent. The more rapid increase of the white is true also of the South Atlantic and South Central divisions, where nearly nine-tenths of the negro population are concentrated. The only Southern states in which the persons of negro descent have increased more rapidly than the whites are Florida, Alabama, Mississippi, Arkansas, West Virginia, and Oklahoma. The negro element, however, forms such a small percentage of the population of the two latter states (4.5 and 7.7 per cent respectively) that they may be practically disregarded.

The more rapid increase of the white element is not due to an influx of whites from other states, as is shown by a comparison of the increase of the native whites of native parentage with the increase in persons of negro descent. In the South Atlantic division persons of negro descent have increased 14.3 per cent and native whites of native parentage 20.5 per cent. In the South Central division the former have increased 19.9 per cent and the latter 29.2 per cent.

The diagrams on pages 386 and 387 show the percentage of the negro element in the various southern states at each census period since 1790.* South Carolina and Mississippi are the only states in which the negro element is now in the majority. Ten years ago the whites were in the minority in Louisiana, but they have since increased in this state twice as fast as the negroes. In Kentucky they have increased three times as fast, and in Texas one and one-half times as fast as the negroes.

THE CHINESE, JAPANESE, AND INDIANS

There has been a considerable decrease in the number of Chinese in the United States during the past decade. In the United States proper the number fell from 107,488 to 89,863, a loss of 17,625, or 16.4 per cent. The Chinese are now more widely distributed throughout the country. In all the divisions excepting the Western division there are more Chinese than there were ten years ago. The state of California has lost over 26,000, but Oregon and Washington have gained a small number. In Hawaii there are 25,767 Chinese. The following table shows the distribution of the Chinese in the United States proper:

Geographical divisions.	No. of Chinese.	
	1900.	**1890.**
Total	89,863	107,488
North Atlantic division	14,693	6,177
South Atlantic division	1,791	669
North Central division	3,668	2,351
South Central division	1,982	1,447
Western division	67,729	96,844

The number of Japanese in the United States proper has increased more than ten fold since 1890. Ten years ago there were only 2,039 Japanese in the country, whereas at the time of the last census they numbered 24,326. As might naturally be expected, a very large proportion, amounting to 96.1 per cent, are concentrated in the Western division. The Japanese element in Hawaii has increased five fold, and now amounts to 61,111, about one-third of the total population of the islands. The distribution of the Japanese in the United

* The diagrams showing the percentage of whites and negroes in certain states at each census are based on similar diagrams in *Statistical Atlas of the United States*, Eleventh Census, by Henry Gannett, p. 18.

States proper is given in the following table :

Geographical divisions.	No. of Japanese.	
	1900.	1890.
Total	24,326	2,039
North Atlantic division	535	247
South Atlantic division	29	55
North Central division	349	117
South Central division	37	61
Western division	23,376	1,559

The Indians also have decreased during the decade, but not nearly as rapidly as has been commonly supposed. There are 6,847 less than in 1890, a loss of only 2.5 per cent. About one half of these Indians are taxed. The census shows an increase in the number of Indians in Alaska of 4,182, but probably the increased figures are because of the more careful enumeration that was possible. The number of Indians in the United States, exclusive of Alaska, is now somewhat less than a quarter of a million—237,196 as against 248,253 in 1890. In Alaska itself there are 29,536 Indians.

DISTRIBUTION OF MALES AND FEMALES

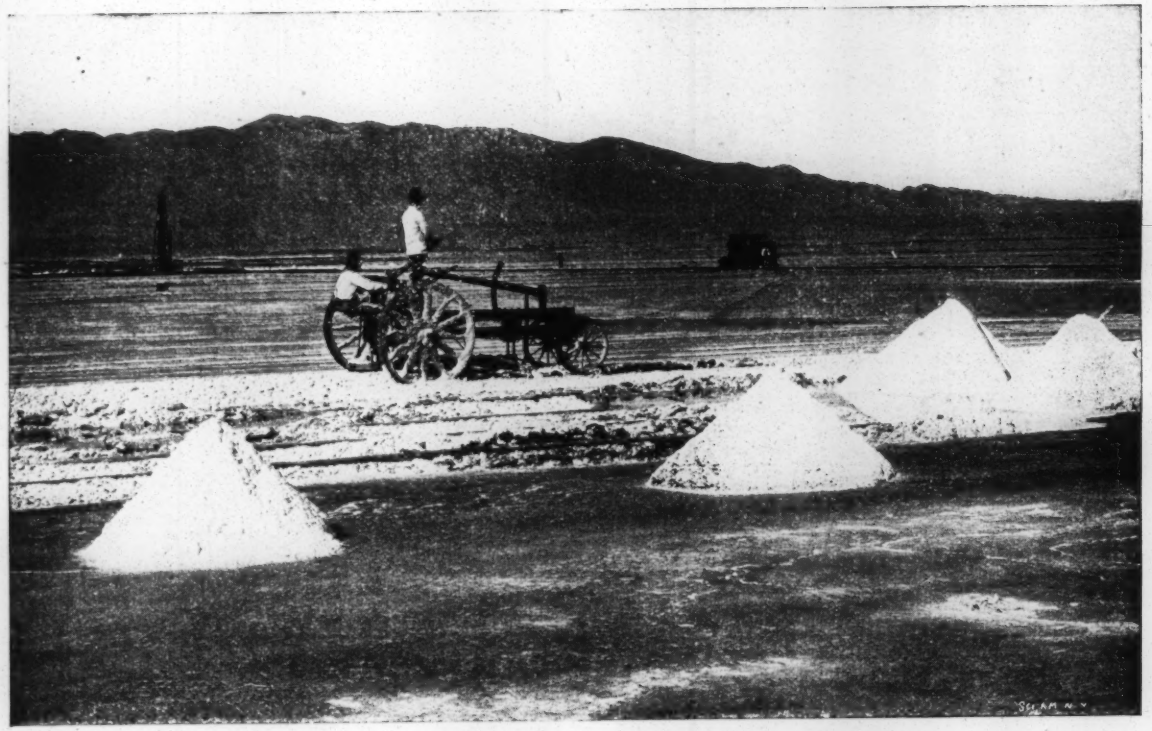
The number of men and women throughout the United States was more evenly balanced in 1900 than ten years before. Each of the states of the Western division shows a larger proportion of females and a smaller proportion of males than in 1890. On the other hand, in the North Atlantic and South Atlantic divisions, considered as a whole, where ten years ago there was a slightly larger proportion of females, there was in 1900 an equal proportion of both sexes. There are eleven states, including the District of Columbia, in which there are more females than males. Each of these states is situated on the Atlantic coast.

Massachusetts has the largest majority of females, having 70,398 more women than men. New York has a female majority of 39,334 ;* the District of Columbia, 14,710; North Carolina, 16,456 ; South Carolina, 10,526, and Georgia, 9,929. Maine, Vermont, and Connecticut have a majority of the male sex. In Pennsylvania there are 106,967 more males, due principally to the large element of the foreign-born working in the mining districts. In all the states of the North Central, South Central, and Western divisions there is a majority of the males. The largest excess of males is in Montana, Wyoming, and Nevada, in which states the males constitute more than 60 per cent of the entire population.

The negro element is the only element of the population in which there are more females than males, there being 54,347 more females of negro descent than males. It is interesting to note that the native whites of native parents have the largest proportion of males to females—51 per cent males and 49 per cent females. The native whites of foreign parents are very evenly balanced as to sex. Naturally there is a large excess of males in the foreign-born element, while six sevenths of the Chinese and two thirds of the Japanese are males.

G. H. G.

* The excess in this State is confined to native whites of native and foreign parentage, the foreign whites, Chinese, Japanese, and Indians showing an excess of males.



Plowing up the Salt in the Sea of Salton

A REMARKABLE SALT DEPOSIT*

By Charles F. Holder

THE deposit of salt at Salton is one of the sights of California. It lies in a depression almost 300 feet below the sea-level, and was at some time in the past the bed of the sea or extension of the Gulf of California.† From the train, which passes near by, the tract looks like a vast snow field, and in the early morning is frequently the scene of beautiful mirage effects. The salt deposit, which is essentially rock-salt, covers about 1,000 acres, and is at present the center of interest on account of the dispute of rival companies over the possession of the property. The company in possession has shipped from this place annually about 2,000 tons of salt, valued at from $6 to $34 per ton. The outfit of the salt mine consists mainly of a crusher, a drying building, and a dummy line from the salt beds to the Southern Pacific Railroad, not far distant.

The work is carried on chiefly by Indians, who can withstand the intense heat of the desert—150° in June—and the glare better than white men. The work is interesting and novel. The drying house is a building 600 feet in length, about which hundreds of thousands of tons of salt are heaped, having all the appearance of snow. Here the salt is dried and milled.

The salt is collected at first with a plow—a singular machine with four wheels, in the center of which sits an Indian guiding it; the motive power is a dummy engine some distance away, which hauls the plow along by cables. As it passes, the steel breaker is seen to cut a broad but shallow furrow, eight feet wide and three feet long, throwing up the ridges on either side. Indians now follow along, and with hoes pile up the salt in pyramidal forms, which later is transported to the mill. Each plow harvests 700 tons of salt per day. A singular feature of this bed is that the salt is being deposited daily by springs which run into the basin, and as the water evaporates it leaves a crust of almost pure chloride of sodium, which ranges from 10 to 20 inches in thickness, over the lake. It will be seen that there is no danger of exhausting the supply, which is forming all the time; and, in point of fact, the plows have in the past years worked almost continuously over the same area, only about 10 acres having been plowed.

The salt, when delivered at the plant, is hoisted to the upper floor and placed in a bulkhead breaker, where it is reduced to particles of the same size. It then passes through a burr mill and is well ground After this it is sifted and is finally passed through an aspirator, which cleanses it of all foreign material, when it is ready for packing in bags. The salt is used for a variety of purposes, and is of several different grades, the lowest being unrefined—a product called hide salt, used in manufactories. Large quantities are sold for sea-bathing purposes, a certain amount producing a very similar chemical equivalent to sea water. Other grades are prepared for the table, dairy, and for the use of druggists.

† See the National Geographic Magazine, vol. xi, no. 9, p. 340 *et seq.*

* From the *Scientific American*.

Piles of Salt at Salton—280 feet below the level of the ocean

SVEN HEDIN'S EXPLORATIONS IN CENTRAL ASIA*

IT will be remembered that Dr. Hedin traveled down the Yarkand and Tarim Rivers to the Lob Nor region (1899–1900), in which he made many excursions of the greatest value to geographical science; but what delighted him most was the very important discovery he made of an ancient lake bed which strongly confirmed the theory he advanced after his first journey in Central Asia, that the ancient Lob Nor Lake was not identical with the lake which commonly bears that name at the present day. Writing from Tiumen (Temirlik), at the end of October, 1900, Dr. Hedin announced his intention of making two more journeys before he set out on the long march home, one among the mountains to the west of Temirlik, the other to the ancient lake bed he had discovered and the Kara-Koshun Lake, which he identified with Prjevalsky's Lob Nor. It is with these two expeditions that his latest letters deal.

Starting on the first journey, to the great or westerly Kum-Kul, early in November, Dr. Sven Hedin crossed and measured these mountains on three lines. He passed through absolutely unknown country, but the excursion was a comparatively short one, lasting only a month, and by December 12 he was ready for the more important march. On this he had with him nine men and eleven camels and ten horses. Khan-ambal was the first point for which he made, and this he reached by a rather difficult mountain road, lying to the south of Littledale's road, which was struck at Khan-ambal. After making a circular march to Sirting, round the magnificent Anambar-ula and back to Khan-ambal, Dr. Sven Hedin proceeded across the desert straight to the north, and passed through the mountainous region which constitutes the western continuation of the Kurruk Tagh. He was able to map the whole of his route from Temirlik, and found that the existing maps were quite incorrect.

During the latter part of the march the little company of travelers had a very trying experience. For twelve long and arduous days, during which they pushed forward as rapidly as possible and covered, in spite of the slow rate of traveling necessitated by the careful observations which Dr. Sven Hedin was continually taking, about twenty miles a day, not a drop of water was found. Fortunately, on the third day the travelers came across some snow, and this just enabled the camels to last out until water was reached; otherwise they must inevitably have succumbed. After this Dr. Hedin, with the aid of the map he had compiled in March, 1900, when he made his great discovery in connection with the Lob Nor problem, was able to find Altimishbuluk quite easily, and from there to proceed with all his caravan to the ruins on the northern shore of the ancient lake bed. The camels were heavily laden with ice, and after they had been sent back to the "bulak," Dr. Hedin was able to stay among the ruins for a week. During this time he was busily engaged compiling maps and plans, taking photographs, gathering together collections of various kinds, and making excavations among the ruins. The discoveries he made were both numerous and important, but he thinks that perhaps his most curious "find" was some twelve complete letters written on paper in Chinese. They were in a marvelous state of preservation, every sign being perfectly distinct and legible.

* From *The London Times*.

Among other curiosities that Dr. Sven Hedin will bring home are thirty little pieces of wood, which, so far as he can judge at present, must have been used as some kind of ticket. Each one has inscribed on it the name of some emperor, the year of his reign, the month, and even the very day. A "siah" who has read some of them tells Dr. Hedin that they are 800 years old, but the latter feels that he cannot form a definite opinion until he has had them translated on his return.

Among the ruins Dr. Hedin found a beautiful Buddhist temple, in which he saw some most artistic wood-carving. One of the representations was a large fish, and in this connection he mentions that one house contained a number of fish bones which were evidently the remains of fish exactly similar to those found today in the Kara-Koshun Lake to the south. These facts Dr. Sven Hedin considers important as strengthening his claim to have found a lake bed which was actually filled not so many years ago, and which is the true site of the Lob Nor of the ancients. In the temple Dr. Hedin further found a Buddha, carved in wood; and he also mentions as one of his "finds" a piece of wood which he describes as being about half the size of the sheet of notepaper he was writing on, on which there was writing in Tibetan characters. In one of the Chinese letters, to which reference has already been made, the place is called Lo-län, and there is also mention of the great road which it will be remembered Dr. Sven Hedin found running along the northern shore of the lake bed, which is said to join Lo-län to Sa-dscheo. Dr. Hedin brought away with him specimens of the various kinds of wood-carving, and students in Europe will eagerly await the sight of these as well as of the photographs of the ruins which Dr. Hedin had developed just before writing and of which he speaks in the most enthusiastic terms.

Of the full importance of his discoveries among the ruins it is, he says, impossible to give at present any adequate idea, but he states that he has gathered together materials for a bulky volume on the Lob Nor problem alone. He is particularly pleased that, on leaving the ruins, he was able to take observations which have enabled him to draw the "leveling" line between the northern shore of the ancient lake bed and the northern shore of Lake Kara-Koshun, or, in other words, to ascertain the variations in level between these two points. These observations, he is convinced, have afforded him the best argument he could possibly have to show that he has found the true solution of the Lob Nor problem. He found that the ruins on the northern shore of the ancient lake bed were situated at a level 2,272 meters higher than that of the surface of Lake Kara-Koshun, but that the lowest point of the lake bed lay about as much below the same surface. Between the lake bed and the lake the desert rises to a point somewhat higher than the ruins. Dr. Sven Hedin states that his observations will enable him to determine not only the surface dimensions of the old lake bed, but also the lines of depth. It has just been mentioned that the lower half of the ancient lake bed is lower than the surface of the Kara-Koshun Lake, and Dr. Hedin reports that the water in the latter is now finding a passage to the old basin. When Dr. Hedin was making his explorations in this part the waters of the present lake were spreading north so rapidly that it was unsafe for the travelers to camp on the shore.

At the date of the letter in which he described these interesting researches (April 23 of this year), Dr. Sven Hedin was at Chaklik, which he had reached only a few days earlier. He was greatly surprised to learn from the letters he found awaiting him about the troubles in China (he himself had been traveling

in a portion of the Chinese Empire!), and somewhat amused at the warnings addressed to him by King Oscar, the Swedish Minister for Foreign Affairs, and numerous other friends, to the effect that he should be careful not to expose himself to the cruelty of the Chinese, while he laughed at the idea that he might be compelled to leave his work unfinished and return to Europe at once.

In Chaklik, he says, though it is a town in the middle of the Celestial Empire, there are only fifteen Chinese, and these were mortally afraid of him and his Russian escort of four Cossacks. They did everything he commanded, procuring camels, horses, and provisions for him without delay and otherwise carrying out his behests with the greatest promptitude. Dr. Sven Hedin's next line of march will be through Tibet, and there, of course, as he remarks, there are no Chinese.

Looking back over his work from Chaklik, Dr. Sven Hedin is fully satisfied with the results he has obtained. He has followed a different plan of work from that which he pursued on his first expedition, in 1893–'97. Then he not only took observations and made notes, but also worked at the books he intended to publish on his return. On this expedition he has done nothing of the latter kind of work, but has left it all to be done when he reaches home. He had already, when writing, compiled 726 sheets of maps, 150 of them large sheets.

He calculates that he has more than twice the cartographical material he accumulated on his last expedition, and hopes to be able to publish it in a large atlas of some 60 or 70 maps on a scale which will permit of the details being shown. The scientific results of all his geographical, geological, and hydrographical studies he proposes to publish in two large volumes of 500 pages each, which will form a text to the atlas. Dr. Hedin has such a wealth of material to draw upon that he will find it very difficult to compress the popular narrative which he hopes to publish into two moderate volumes. He hopes, however, to do so.

As to his future plans, Dr. Hedin does not now think that he will reach Europe this year. When writing last he proposed to spend some eight or ten days at Chaklik, and then, having prepared his caravan very carefully for the last stage of his great journey, to cross Tibet diagonally from Temirlik to the sources of the Indus, passing, if possible, a little to the north of Lake Manasarowar. As he travels slowly and maps carefully, Dr. Sven Hedin expects that this march will occupy the rest of this year. If it can be arranged, he would like to visit Lord Curzon in Calcutta; then, returning to his caravan, proceed as quickly as possible to Kashgar *via* Ladak. He intended to send all his collections and unnecessary luggage — fifteen horses' load — direct to Kashgar from Chaklik. From Kashgar, Dr. Hedin does not feel that he could return direct to Europe on account of his Cossacks, who have rendered him invaluable services, and to whom he has become quite attached. These he feels bound to leave in none but a Russian town. Altogether, therefore, it will be about a year from the date of his last letters before European geographers can receive Dr. Sven Hedin with the welcome which he has so well earned.

RECENT DISCOVERIES IN EGYPT

RECENT discoveries in Egypt have carried the record of Egyptian civilization back definitely for 1,000 years and have given light to what was happening during 1,000 years more. In other words, Egyptian history has been brought to light for nearly 2,000 years before the building of the pyramids, which happened about 4000 B. C. As Prof. W. M. Flinders-Petrie, in an article in *Harper's Magazine* for October, says, "We even know what was going on in every generation for some 2,000 years before that time [building of the pyramids] far more than the later Egyptians themselves knew."

It is the discoveries of treasures of gold and ivory and beautiful stones in the royal tombs at Abydos through the persevering and efficient efforts of Prof. Flinders-Petrie and members of his party that have brought to light the history of this remote past. The oldest record of human history is the statement that ten kings reigned in Abydos, in upper Egypt, during the 350 years before Mena (4777 B. C.), who founded the united kingdom of the whole land and is counted as the first king of the first dynasty. Four of the tombs of these earliest kings were identified several years ago, as well as those of Mena and his successors, but their significance was not understood until this spring, when a large number of small objects were found in the tombs at Abydos. The most surprising discovery were four bracelets belonging to the Queen of King Zer, about 4700 B. C., some 2,000 years earlier than any other jewelry thus far identified. The bracelets were wrought with the most ingenious and delicate workmanship. Even a magnifier did not reveal the joints, so perfect was the soldering. The finest bracelet is formed of alternate plaques of gold and turquois, each surmounted with the royal hawk and paneled to imitate the front of the tomb or palace.

It seems marvelous that the jewelry had not been previously discovered. In early times the tombs were broken into and ransacked. Some plunderer had broken up the queen's body, and being disturbed in his plundering had broken off an arm of the mummy and thrust it into a crevice in the wall. Centuries later, about 1400 B. C., the tomb was cleaned out and a shrine of Osiris built in it, and for a thousand years every visitor passed within a few feet of the fragment. Two thousand years later the Copts utterly destroyed the shrine and the other royal tombs, and yet the arm lay untouched. Three years ago a French explorer carefully examined the whole space, and yet the arm remained unseen until one of Dr. Flinders-Petrie's workmen noticed it and called his attention to it. The arm was opened carefully and the bracelets revealed.

Professor Flinders-Petrie believes that during the 57 years of King Zer's reign a rapid crystallization of art took place. Before his reign everything was archaic and tentative, but afterward vigorous and perfect. He believes "this sudden fixation of the final forms is what is also seen in Greek art, where the interval of 40 years between the Persian war and the Parthenon sufficed for the step from archaic work to the highest perfection, after which all else was a gradual decay." Fragments were found of hundreds of different forms of vases cut in hard stones. In the tombs of one of the kings of the second dynasty, about 4373 B. C., were seven stone basins with gold covers, a whole dinner service in thin beaten copper, and over a hundred models of food. Another prize was a royal scepter formed of cylinders of rich red sard held together by a copper rod

in the center and bound around by seven gold rods. The handle end was lost; but this is the only ancient scepter known before that of Tarentum, 4,000 years later. Several miles to the north of Abydos were this year discovered the royal tombs of a king several centuries later, with eighteen chambers sixty feet under ground.

Thus the egyptologist has now identified the names of king after king in those ancient times which were "as old in the days of Exodus as the Exodus is in our time." As Professor Flinders-Petrie says, the historian now knows "far more about the civilization of these oldest known kings than we do about our own Saxon kings of England."

KODIAK NOT KADIAK

OFF the coast of Alaska, near Cook Inlet, is a large island which has had trouble with its name—trouble with its spelling, trouble with its pronunciation.

The spelling now adopted by the U. S. Board on Geographic Names is Kodiak (pronounced Kō′-di-ak), this being a reversal of the decision Kadiak made by the same Board about 10 years ago. The universal local usage as to this name is Kodiak. Such, also, is the general usage on the Pacific coast. It is this widely extended and firmly established usage which has led the Board to discard an alleged "correct" form and adopt an alleged "corrupt" form which local usage has firmly established.

Kodiak is a large island about 100 miles long by 50 miles wide. Its principal town (population in 1900 341) was called St. Paul by the Russians, and is now called both St. Paul and Kodiak. The post-office in this town, established in August, 1888, is called Kodiak.

The island was discovered by Stephen Glotof, a Russian fur hunter, who anchored in Alitak (Kaniat) Bay, in the southwestern part of the island, on September 8, 1763. He learned from the natives that the island was by them called Kikhtak.[1] Kíkhtŭk is the Innuit word for island.[2] Petrof says:[3]

"Kikhtak or Kikhtowik is the Innuit word for island. At the present day (1886) the natives of the peninsula speak of the Kadiak people simply as Kikhtagamutes, islanders. The tribal name appears to have been Kaniag, and the Russian appellation now in use was probably derived from both."

Martin Sauer,[4] who wrote the account of Billings' expedition, 1785–1794, says:

"Shelikof has called this island Kichtak as the original name of it, in which, however, he is mistaken, for Kichtak or Kightak is merely an island; they call the Trinity Island Kightak Sichtunak, thus, Kightak Kadiak; and to my astonishment one of them called Alaska a Kightak or island."

Cook,[5] in 1778, got the name Kodiak from the Russian Ismailof. This spelling was followed by Meares, 1788, Vancouver, 1794, and Langsdorf,[6] 1804, who has Kodiak, Kadjak, or Kuktak—*i. e.*, Great Island. The British Admiralty charts, Nos. 260, 278, 787, 2172, 2460, and 2558, followed the spelling Kodiak. Sauer,[7] about 1790, has Kadiak, and so also has Lutke,[8] 1836. Dixon, 1789, has Kodiac and Codiac; Lisianski, 1804, has Cadiack. At the time of the purchase of Alaska the form Kodiak (pronounced Kō′-dy-ak) was in general use among English-speaking people, and the same form, Kodiak (pronounced Kăd-yăk), was in general use among the Russians. Dall[9] says:

"The Russian O when not accented

should be rendered in English by A; from the neglect of this (comes) Kódiak instead of Kadiák."

Also, he says:

"Kadiăk.—The name of the largest island south of Aliáska. It is a derivative, according to some authors, from the Russian Kádia, a large tub; more probably, however, it is a corruption of Kaniág, the ancient Innuit name. The inhabitants, according to Coxe, called themselves Kaniágist or Kaniágmut. This name is almost invariably misspelled by English authors as Kodiak, Codiac, Codiack, Kadiack, and in other similarly absurd ways. The above is the only correct spelling."

The spelling of this name was submitted to the Board on Geographic Names in 1890 and the form Kadiak adopted. Local usage has, however, remained Kodiak, both in form and pronunciation, while the pronunciation Kā'-dy-ak is often heard from the lips of those who have learned the name, not from hearing it, but from the printed page. Moser, in Report of the Fish Commission (1899, p. 19), says:

"Though the present approved spelling of the name of this island is Kadiak, the company retains the former spelling Kodiak."

Martinez and Lopez de Haro, in 1788, named the island Florida Blanca.

M. B.

[1] Bancroft (H. H.) Hist. of Alaska, 1886, pp. 141, 145.
[2] Dall (W. H.) Alaska, 1870, p. 532.
[3] Bancroft's Hist., p. 224.
[4] Sauer (M.) Account of geographical expedition, etc., 1802, p. 174.
[5] Cook (J.) Voyage to Pacific Ocean, 1785, 2d. ed., vol. 2, p. 504.
[6] Langsdorf (G. H. von). Voyages and travels, 1814, vol. 2, p. 58.
[7] *Op. cit.*, pp. 168–170.
[8] Lutke (F. P.) Voyage, etc., Partie nautique, 1836, p. 268.
[9] *Op. cit.*, pp. 529 and 532.

ORIGIN OF THE NAME "CAPE NOME"

DURING the last four years I have had numerous inquiries concerning the origin of the name *Cape Nome*, on the northwest coast of Norton Sound, Alaska. I searched every available chart and narrative of that region to trace it home.

I traced it back to Admiralty Chart No. 2172, of 1853, as being the earliest to use the name. It is not in the Great Atlas of Tebénkof of 1848–'52, devoted to the North Pacific.

I looked up the tracks of the Sir John Franklin rescue ships, H. M. frigate *Herald* and brig *Plover* (1845–'51), and became satisfied the name was given in the cruises of one or other of those vessels.

A short time since I wrote to the chief hydrographer of the Admiralty and asked if the name *Nome* appeared among the lists of officers of the *Herald* and *Plover*.

Today I have a letter from the hydrographer of the Admiralty, dated London, August 9, which contains this statement:

"When the MS. chart of this region was being constructed on board H. M. S. *Herald*, attention was drawn to the fact that this point had no name, and a mark (? Name) was placed against it.

"In the hurry of dispatching this chart from the ship this ? appears to have been inked in by a rough draughtsman and appeared as Cape Name, but the stroke of the "a" being very indistinct, it was interpreted by our draughtsman here as C. Nome, and has appeared with this name ever since.

"This information is from an officer who was on board the *Herald* when the chart was being constructed."

So the mystery of the name has been satisfactorily solved.

GEORGE DAVIDSON,
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GEOGRAPHIC NOTES

EXPLORATIONS IN ALASKA

THE U. S. Geological Survey had four important parties at work in Alaska during the past season. As a result, large sections of territory previously unmapped and but little known have been well explored geologically and topographically.

The first party, under command of Mr. W. J. Peters, assisted by Mr. F. C. Schrader, left Seattle early in February. They went by trail from Skagway to White Horse, and then pushed on with dog teams 1,200 miles to Bergman, a trading post on the Koyukuk River. The year previous a cache of canoes and provisions had been made at this point in anticipation of the trips which the party under Mr. Peters and another under Mr. Mendenhall were to make. The party then advanced about 100 miles, to the summit of the divide between the Yukon and the Arctic Ocean, to select the best route to the ocean. Here they made a portage of several miles across to the waters of Colville River, which they followed to the Arctic Ocean. After leaving Bergman they were in territory that had previously not been penetrated and was entirely unknown. Mr. Peters reports that rolling tundra extends from the mountains to the ocean. The original plan for the party was on reaching the Arctic Ocean to turn east, and then return to Bergman over land, but the season was so late that Mr. Peters decided to proceed westward. The party obtained some small canoes from the natives and pushed along the shore to Point Barrow. Here they obtained a whaling boat, which they hoped would enable them to reach Cape Nome. When 350 miles down the coast they fortunately fell in with a collier, which shortened the remainder of the journey to Cape Nome.

The second party, under Mr. T. G. Gerdine, assisted by Mr. A. J. Collier, sailed from Seattle June 1 with twelve pack animals and reached Nome in the middle of June. They found the season there very backward, so that it was several days before they were able to begin active work. The last week in June they proceeded in small boats to Teller, about one hundred miles to the northwest, the pack train following them along the beach. The mapping of Seward Peninsula, including the whole of the Nome mining district, begun last year, was brought to a successful termination.

The third party, under Mr. W. C. Mendenhall, assisted by Mr. D. L. Reaburn, starting from Fort Yukon, made a survey of the Yukon River as far as the Dall River and up the Dall River to the portage across to Old Man River, and down this river to Bergman. Here they also made use of the cache placed there the year before. From here they proceeded up the Allashook River, and then down the Kowak to Kotzebue Sound. The territory that they passed through after leaving Bergman was unknown. The party has not yet returned to Washington, so that further information about their work cannot be had.

The fourth party, under Mr. A. H. Brooks, worked in southeastern Alaska. For two months Mr. Brooks' labors were on Prince of Wales Island and the mainland to the northeast, investigating the mineral resources of the country. He reports much development of the country in progress. Another month was passed in making a reconnaissance of the region to the north extending from Juneau to Skagway.

CERTAIN PERSISTENT ERRORS IN GEOGRAPHY

IT is strange that many legends which a generation ago were accepted as true, but which have long since been disproved by geographers, should still be accepted by the general public, and even included in many geographic textbooks. Mr. Henry Gannett, in a recent article in the Bulletin of the American Geographical Society, enumerates a number of these errors and shows wherein they are at fault.

It is a persistent idea that the presence or absence of forests has an influence upon the amount of rainfall. The arid and desert regions of the world, more particularly the shores of the Mediterranean Sea, have been cited as the result of man's wanton destruction of forests. In this case, however, the absence of forests is not the cause but the result of the desert. The geographic nature of the Mediterranean region, the configuration of the land and water, and the prevailing winds are of such nature as to permit only of a light rainfall. These conditions have existed for many thousands and perhaps for millions of years, and from the nature of the mountains, cliffs, and cañons of the region it is apparent that they have been evolved in a dry rather than in a moist climate.

A second widespread error is that the floods of our rivers have recently been much greater and more frequent than in former years, also due to destruction of the forests. The cutting away of forests is usually, however, followed by a thick growth of bushes and underbrush, which holds the water as effectively. Mr. Gannett cites the case of the Ohio River as a proof that the floods are not more frequent in recent years. This river has been gauged continuously, and the gaugings show very little change. Whatever change has taken place in the forest areas of its basin.

Another error is the citing the existence of fiords as a proof that the coast has been sinking. These gorges are partially filled by the sea, and it has been argued that they must necessarily have been cut when they were above the sea-level. On the coast of Alaska we now have similar fiords in the process of formation by glaciers which at their lower ends are often hundreds of feet beneath the surface of the water. Undoubtedly the Norwegian fiords were likewise cut by glaciers extending below the surface of the water. The coast of Norway may be sinking, but the fiords are not evidence of it.

Mr. Gannett believes that perhaps the most prevalent error concerns climate. It is generally believed that the mild climate of Western Europe is produced by the Gulf Stream, which washes its shores; that the severity of climate in the northeastern part of the United States is a result of a current from the Arctic flowing along the coast, and that the mild climate of Northwestern America is induced by the Japan Current, also sweeping down the coast. Each of these beliefs is based upon the supposition of a great body of water moving thousands of miles in one steady stream. As a matter of fact, both the Gulf Stream and the Japan Current lose their velocity long before they reach their supposed destination, and the Arctic current is proved not to exist. Mr. Gannett then proceeds to explain the conditions of the climate of these representative portions of the earth as follows: The land absorbs heat rapidly and as rapidly gives it off, while the water absorbs heat slowly and holds its heat longer. The sea has a much more uniform temperature because of its constant motion. The prevalent winds of the northwestern coast of Europe blow from the sea, which is warmer than the land in winter and cooler than the land in summer; hence the mildness of England's climate in summer and winter. The prevalent

winds in the eastern part of North America are from the west—from the land; hence the severity of climate of the eastern part of the United States and Canada—great cold in winter and great heat in summer. The prevalent winds in the western part of the United States are from the ocean, and hence, as in the case of England, its climate is mild.

Another persistent error is found on many maps, which represent the main system of the Cordillera as running in a direct line to the Arctic Ocean just west of the mouth of the Mackenzie, whereas it has been shown that the mountain system follows the coast of Alaska, forming the "Backbone of the Alaskan Peninsula," including the great mountains of St. Elias and McKinley.

THE DEATH RATE IN THE UNITED STATES IN 1900

THE records of death in 1900 were registered by census enumerators in an area including somewhat more than one-third of the population of the United States. These returns show that the death rate in this registered area was 17.8 per 1,000 of population. The area for which records were obtained included Connecticut, District of Columbia, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, Maine, and Michigan, and 53 cities of 8,000 or more population in other states. The population included was 28,807,269, or about 38 per cent of the entire population of the United States.

The death rate in 1890 for an area somewhat less was 19.6 per 1,000, so that apparently the death rate in the United States has decreased 1.8 per cent in ten years. It must not, however, be inferred that all this decrease is due to the improved health and vitality of the American people. Mortality statistics must necessarily be always uncertain. Probably the records of death at no census were so efficiently and thoroughly registered and verified as at the census of 1900; but a difference in results is the necessary consequence of a more perfected registration—that is, the difference of figures in the percentages of death rate in 1890 and 1900 does not necessarily imply an increase or decrease in the death rate, but may be the result of a more accurate registration. It is, however, gratifying that the difference in percentages is in the nature of a considerable decrease.

The Census Bulletin (no. 83) treating of the mortality statistics for the year 1900 contains a multitude of interesting tables, but the figures must for the most part be taken with due allowance. For instance, St. Joseph, Mo., is recorded as having a death rate of only 9.1 per cent per 1,000 in 1900; St. Paul's death rate was 9.7, though ten years before it was half as much again, 14.9—a remarkable advance in the healthiness of the city! On the other hand, Charleston, S. C., would appear quite unsafe to live in, for its death rate, 37.5, is four times that of St. Joseph. Natchez, with a death rate of 39.7, is even more unhealthy than Charleston.

CHILE'S DISPUTES WITH PERU AND BOLIVIA

THE Pan-American Congress has aroused attention to the long-standing disputes between Peru and Chile and Bolivia and Chile. After the overwhelming defeat of Peru and Bolivia by Chile in 1883, Peru was forced to surrender unconditionally to her conqueror the province of Tarapaca, which is larger than the states of Vermont and New Hampshire combined. Peru was also compelled to surrender the province of Tacna and Arica for ten years, at the end of which period the people of the province were to decide by a *plebiscité* whether they would continue allegiance to Chile or resume their allegiance to

CERTAIN PERSISTENT ERRORS IN GEOGRAPHY

IT is strange that many legends which a generation ago were accepted as true, but which have long since been disproved by geographers, should still be accepted by the general public, and even included in many geographic textbooks. Mr. Henry Gannett, in a recent article in the Bulletin of the American Geographical Society, enumerates a number of these errors and shows wherein they are at fault.

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Peru. In 1894, when the time for taking the *plebiscité* came, for various reasons advanced by Chile, the voting was deferred, and it has since been repeatedly postponed, notwithstanding the protests of Peru.

The province which is in dispute has an area of 8,688 square miles, about the size of Massachusetts, and a population of 25,000. It has been a source of great revenue to the Chilean government because of its guano and rich nitrate deposits. The occupation of Chile has now lasted for seventeen years, so that even if a *plebiscité* should be taken, the chances are that the decision would be in favor of its retention by this more enterprising government.

Bolivia, in penalty for her defeat, was compelled to mortgage to Chile the Littoral department, which was her only province bordering the Pacific Ocean. Finally she formally ceded it to Chile in 1896, with the condition that at least one port on the Pacific Ocean be granted her. This concession Chile has steadily refused, but she has offered $2,500,000 in compensation, an offer rejected by the Bolivians, who assert that Chile has made $300,000,000 out of the province.

The Littoral has an area of 29,910 square miles. An evidence of its commercial value to Chile is that its population doubled during ten years, 1885–1895. Its source of wealth consists in its rich nitrate deposits.

COMMERCE OF THE UNITED STATES

FOR the first time in the history of the United States the exports of the country for one year have exceeded in value one and one-half billion dollars. In the twelve months ending August 31, 1901, the value of the exports of the United States reached the tremendous total of $1,500,613,236. The value of the imports for this same period amounted to not much more than one-half of the value of the exports—in figures, $843,681,360. Our annual exports now exceed the annual exports of Great Britain.

The Bureau of Statistics of the Treasury Department in a recent report gives the following interesting table, which shows the imports and exports from the United States during the twelve months ending August 31 of the last six years:

Year ending August 31—	Imports.	Exports.
1896	$737,163,827	$906,403,525
1897	756,673,034	1,066,603,779
1898	623,192,020	1,236,643,922
1899	723,232,313	1,269,504,882
1900	848,675,810	1,399,000,520
1901	843,681,360	1,500,613,236

Thus the exports have during the five years increased more than 50 per cent, while the imports have increased less than 15 per cent.

The growth in exports during these years has, as is well known, included all great classes of products and manufactures. During the last year, however, the exports of manufactures have not kept pace with those of other industries. In the eight months ending with July, 1901, the latest month in which the details are accessible, exports of manufactures fell $32,000,000 below those of the corresponding months of last year, while exports of agricultural products were $57,000,000 greater than those of the corresponding months of last year. This reduction in exports of manufactures is about equally divided between copper and iron and steel, the reduction in copper exports being about $16,000,000, and in iron and steel about $16,000,000. The reduction in copper exports, according to the Bureau of Statistics, is chiefly due to the decreased demand for copper in other parts of the world. In exports of iron and steel the reduction is apparently explained by the partial suspension of manufacturing activities in certain lines in July and August, by the reduced demand abroad,

by the reduction in prices of the articles exported, and in large part by the fact that the exports to Hawaii and Porto Rico, which were included in last year's statistics, are not included in the figures for the present year, the total exports of iron and steel to these islands in the fiscal year 1900 having been about $7,000,000.

IMMIGRATION DURING 1901

NEARLY half a million immigrants entered the United States during the fiscal year ending July 1, 1901. This number was some 40,000 more than that of the previous year and more than double that of 1898, the year of smallest immigration for 22 years. A comparison of the arrivals during 1901 with those of 1882 shows in marked degree that the character of the immigration has very radically changed, a fact also discussed on page 385 of this number. In 1882, when 788,992 immigrants entered the country, the largest inflow in the history of the United States, the northwestern countries of Europe, Germany, Norway and Sweden, Great Britain, and Ireland, furnished the bulk of the new Americans. During 1901, on the other hand, the arrivals from these countries formed but a very small share of the inflow. Their place was taken by Austria-Hungary, Italy, and Russia.

For instance, in 1882, 250,630 Germans entered the United States, but in the fiscal year just ended their number fell to 21,651, the number of Swedes from 64,607 to 23,331, and of the English from 82,394 to 12,214. Meanwhile the number of Italians has increased from 32,159 in 1882 to 135,996 in 1901, and of Russians from 21,590 to 85,257.

The following table shows the number of immigrants from the principal European countries during the two years compared and the per cent of the total immigration contributed by each country.

Immigrants from—			Per cent of total.	
	1882.	1901.	1882.	1901.
All countries....	788,992	487,918		
Austria-Hungary	29,150	113,390	3.7	23.2
Germany.....	250,630	21,651	31.7	4.4
Denmark.....	11,618	3,655	1.4	0.7
France.....	6,004	3,150	0.7	0.6
Italy.....	32,159	135,996	4.0	27.9
Netherlands....	9,517	2,349	1.2	0.5
Norway.....	29,101	12,248	3.7	2.5
Russia.....	21,590	85,257	2.7	17.4
Sweden.....	64,607	23,331	8.2	4.7
Switzerland.....	10,844	2,201	1.3	0.4
England.....	82,394	12,214	10.4	2.5
Ireland.....	76,432	30,561	9.7	6.2
Scotland.....	18,937	2,070	2.4	0.4

EXPLORING TIBET.

THE Japanese Buddhist Priest, Mr. Nokai, who went to China in November, 1898, to visit Lassa, Tibet, to study the Lama philosophy, is now making his third attempt to reach that forbidden land, his two previous attempts having ended in failure. The first attempt was made by way of Szechuen and the second by that of Kansu, and now he is trying the Yunnan route. Miss E. R. Scidmore, Foreign Secretary of the National Geographic Society, is confident that he will reach Lassa this time. The explorer left the provincial capital of Szechuen on February 21 and reached the capital of Kuichau on March 9. Writing his impressions of Kuichau, he says that Roman Catholic churches are found at all the important places in the province, showing the untiring zeal with which the French missionaries have been conducting their work. The number of the Miaotsz aborigines in Kuichau and Kwangsi is believed to reach ten million. The French missionaries that had withdrawn from Yunnan on the oc-

casion of the Boxer disturbance last year have already come back to their field of operation, and Mr. Nokai saw them repairing or rebuilding the churches damaged or destroyed on that occasion.

Tali-fu, he writes, is rich in natural scenery, with the rivers clear and the mountains well covered with woods. Marble is the chief product of this district, and there are over 100 marble works in the suburbs of the city, which, however, is a comparatively lonely town, containing at best 4,000 houses, though it boasts of the presence of several government offices, including those of the local military commander and the taotai. The Santa temple in Tali, built over a thousand years ago, is a religious edifice widely known throughout China. Every year for five days, ending with the twenty-second of March (old calendar), a great festival is conducted in the precincts of the temple, to which throng hundreds of thousands of visitors and merchants from the Kwang provinces—Hunnan, Kiangsi, Yunnan, and Szechuen. Three pagodas stand in the temple ground, the largest being fifteen stories high. The city presents a queer appearance, owing to the mingled residences of several different races—swarthy Hindus, copper-colored Tibetans, and Chinese The place seems to mark a boundary between civilized and barbarous regions.

The Russian Expedition to Spitzbergen to measure an arc of the meridian has returned to St. Petersburg after having successfully completed the work. The party reached Spitzbergen the latter part of June, and during the summer have been working in harmony with a similar Swedish expedition. The Russian and Swedish governments have for several years been actively promoting the measurement of the arc.

The Twenty-second Congress of the geographical societies of France met at Nancy in August, 1901. Twenty societies were represented. The principal resolutions adopted advocated the establishing of colonial bureaus in the principal towns of France and her colonies in order to educate young men and women for work in the colonies; the early construction of a complete canal system in France, and the passing by the National Assembly of regulations to promote the national birth rate.

The Testing of Arctic Currents by setting casks adrift upon the ice, originally proposed by Rear Admiral Melville, has been continued the past summer. In August the revenue cutter *Bear* deposited fifteen specially constructed casks at different points on the ice in about 72° 20′ north latitude, between Point Barrow and Wrangel Island. The spot where each was set adrift was carefully noted and recorded. Each cask contains instructions to the finder to inform the U. S. Hydrographic Office where and when the cask was picked up.

The Academy of Sciences at St. Petersburg has received from Baron Toll a telegram announcing that he has reached the Gulf of Taimur. One member of his party succeeded in reaching the Nordenskjold Islands, and Baron Toll himself was about to explore Chelyuskin. It will be remembered that Baron Toll's party left St. Petersburg on May 8, 1900, with the intention of forcing a way along the northern coast of Asia to the Bering Sea, all the while making careful scientific observations and endeavoring to connect the voyages of the *Fram* and *Jeannette*.

The U. S. Commission on Fish and Fisheries has appointed Dr. C. H. Gilbert, of Leland Stanford University, to take charge of the deep-sea investigations by the commission about the Hawaiian Islands. Dr. Gilbert will sail on the *Albatross* from San Francisco about De-

cember 1. The dredging and other work will be made from this vessel. For the past ten years Dr. Gilbert has been professor of zoölogy in the Leland Stanford, Jr., University, and is the joint author with President David Starr Jordan of "Synopsis of the Fishes of North America." For a number of years he has also had official connection with the Fish Commission.

American Progress in the Philippines.—During the three years since the American occupation of Manila 6,000 miles of telegraph lines and cables have been laid in the Philippine Islands by the U. S. Signal Corps. It is now possible to telegraph from Cape Bojeador, on the extreme north coast of Luzon, to the capital of the Jolo Archipelago, 1,000 miles distant. Governor Taft, at Manila, can thus be informed at almost a moment's notice of happenings in all sections of the archipelago. Three years ago, to send a message from Jolo to Manila required nearly three weeks.

U. S. Biological Survey.—Dr. C. Hart Merriam, Chief of the Survey, during the past season has been studying the zones of distribution of the fauna of southern California. He was also a month in the Sierra Nevada with John Muir engaged in similar work there. Mr. Preble, of the Survey, was making collections in the region of the Great Slave Lake. Specimens of the fauna of the five Arctic regions—Labrador, Hudson Bay, the Mackenzie River and the Great Slave Lake, the Yukon River, and the Alaskan coast—are now possessed by the Survey.

National Geographic Society Lectures.—On another page of this Magazine appears the program of lectures presented in Washington by the Society during the season of 1901–1902. The course is comprehensive, including the main problems of a geographic character, that are of interest and importance to the American public. Each subject is to be treated by an eminent authority who has had exceptional opportunities for studying the topic which he will discuss. To select a more interesting and valuable program would in fact be difficult. The majority of the lectures will be published in this Magazine during the coming months.

The Imperial Geographical Society of St. Petersburg has received letters from Lieutenant Kozloff, who was sent out in March, 1900, to explore the sources of the Yellow and Yangtze rivers. During the summer of 1900 the party made important surveys around the headwaters of the Yellow, and then, because of hostile natives, turned south toward the sources of the Yangtze. Later, in March, 1901, they fell in with a caravan traveling from Lassa to Szechuen, and gave them the letters for St. Petersburg. The party was not attacked in 1900, but a report is now current in St. Petersburg that they were attacked during July, 1901, near Kobdo, and twenty men of the party slain. Kobdo is in Mongolia, about 100 miles from the Siberian border, and was the starting point of the expedition.

The U. S. Coast and Geodetic Survey has established a magnetic observatory at Sitka, Alaska, and is constructing another at Honolulu, Hawaii. At these stations observations will be made simultaneously with those taken by the British, Swedish, and German expeditions to south polar regions, beginning in February, 1902.

The Survey will soon dispatch the *Pathfinder* to the Philippine Islands to assist in charting the harbors and coasts, which will then be actively begun.

During the past season parties from the Coast Survey have been charting Cross Sound and Icy Strait, which form the northern approach to Juneau and

Skagway. The many channels between the Fox Islands of the Aleutian Archipelago were another object of work.

A Map of the Philippine Islands on the scale of 15 miles to an inch is in course of preparation by the U. S. Signal Corps, and will be ready for distribution about January 1, 1902. During the past year much new information has been obtained by military and civil expeditions throughout the islands, which will be incorporated in the new map. The map will contain the greatest number of names yet published on any map of the archipelago, the spelling in all cases being according to that approved by the U. S. Board on Geographic Names in its recent report. The military telegraph lines and cables, commercial and military telegraph stations, telephone stations, open ports, coastwise ports, and light-houses will also be indicated, as well as the boundaries of the provinces as established by the Commission.

The Antarctic, carrying the Swedish south polar expedition, sailed from Gothenburg October 16. Prof. Otto Nordenskjold, the leader of the party, states that they will proceed to Buenos Ayres and Tierra del Fuego, and then push as far south as is found possible. When winter comes on a party of six under Nordenskjold will land and spend the winter making scientific observations. The *Antarctic* meanwhile will return to Tierra del Fuego in charge of one of the scientists of the party, who will conduct researches in that little explored country. Thus, while the Germans are exploring the regions south of the Indian Ocean and the British that south of the Pacific Ocean, Dr. Nordenskjold and his party will be at work in the regions south of the Atlantic Ocean. Professor Ohlin and M. K. A. Anderson go as zoölogists, Dr. Bodman as hydrographer, Dr. Skottoberg as botanist, and Dr. Ekolof as medical officer.

Depth of the Atmosphere Surrounding the Earth.—The Belgian Royal Meteorological Observatory has published the estimates made by various mathematicians and physicists regarding the depth of the atmosphere surrounding the earth. The calculations of the various scientists upon this subject recently given in *The Scientific American* are widely divergent. Biot estimated that the depth was only about 40 miles; Bravais, 70 miles; Mann, 81 miles; Callandrau, 100 miles; Schiaparelli, 125 miles; Marie Davy, 187, while Ritter stated that it reached to a height of 216 miles. In Great Britain, during the early part of the last century, the depth of the atmosphere was generally accepted as being 47 miles, but the fact that meteors became incandescent at a much greater altitude proved that this calculation was at fault. Sir Robert Ball states that meteors have been observed at a celsitude of more than 200 miles; and since they only become incandescent when they come into contact with the air, the calculation of Ritter appears to be the most correct.

In Bolivia, in the region that lies between the crest of the Andes and the great Amazonian Plain, an expedition equipped and sent out by Sir Martin Conway is continuing his work. The country cannot be called wholly unknown, as large areas have been visited by native prospectors, but it has never been scientifically explored and mapped.

It is from the famous gorges of this region that the Incas obtained much of their gold, and in the fertile valleys is grown some of the best coffee in the world. The leader of the expedition is Mr. Jones W. Evans, a well-known geologist and traveler, who has made his name known by good work done in the western part of Brazil. With him are an assistant geologist, a surveyor, a botanist from the United States, and a zoölogist. They hope to make

extensive scientific collections, which will be presented on their return to the museums of London and New York.

The party of French engineers sent out at the request of the Bohemian government are also actively engaged in making a triangulation that will enable a complete survey of the country to be made.

The Division of Mining and Mineral Resources of the U. S. Geological Survey has published a chart showing the mineral products of the United States during the calendar years 1891–1900. The chart, compiled under the supervision of Dr. David T. Day, is published in advance of the annual report of the Survey for 1900, which will soon be ready for distribution. During 1900 the value of the mineral products of the country for the first time exceeded one billion dollars, reaching $1,070,108,889. More than half of this amount, or $552,418,627, consisted of metallic products, and $516,690,262 of non-metallic products, while about one million dollars is unspecified. Pig-iron formed about one-quarter of the value of the mineral products of the year, amounting to $259,944,000. Then followed bituminous coal, with a value of $221,133,513; copper, $98,494,039; Pennsylvania anthracite, $85,757,851. The value of the gold products exceeded that of the petroleum by over three million dollars—$79,322,281 as against $75,752,691. Silver followed next, with $77,070,461. Our mineral products have doubled since 1887 and trebled since 1880.

Oscar Neumann, the eminent German explorer, has reached Khartum after a year and a half journeying in Central East Africa, more particularly in Southwestern Abyssinia. With Baron Erlanger and several companions, he left Zeila in January, 1900. The movements of the Mad Mullah prevented them from going far into Eastern Somaliland, so they turned westward and visited the holy towns of Sheikh Hussein and the holy mountains of Abulnass and Abulcassim. Later they traveled to the capital, Addis Abeba, by a new route. Leaving this town in November, they proceeded to Lake Stefanie, carefully mapping much new country. Their most important work was in the southwestern provinces of Abyssinia and in the British territory to the west around Lobat. The hardships of travel had reduced them to serious straits, when they fortunately came upon a steamer carrying Slatin Pasha and Bluett Bey, who took them to Khartum.

The publication of the results of Herr Neumann's journey will be awaited with much interest, as almost nothing is known of large sections of the country he traversed. It is reported by telegram that he has brought back the largest zoölogical collection ever made in Central Africa.

Geological Explorations Near Athens.—The British Museum during the past summer has obtained some important fossils of Tertiary animals at Pikermi, near the Marathon Road, about 12 miles from Athens. The specimens were found at a considerable depth below the bed of a mountain torrent, and were so jammed together that evidently the animals were buried alive, probably by torrential action. About 50 years ago Dr. Albert Gaudry, in this locality, obtained a great number of fossils for the Paris Museum. Since then the Vienna Academy has made a smaller collection; but until the present year the British Museum had sent no expedition to this field. Among the principal finds were numerous bones of *Hipparion*, the three-toed predecessor of the horse; *Helladotherium*, a short-necked giraffe allied to the *Okapi*, the new mammal recently discovered by Sir Harry Johnston in the forests of the Kongo State; several

skulls of *Mastodon*, and skulls, teeth, and bones of the great saber-toothed tiger *Machærodus*, specimens of which have also been found in England. One of the prizes was the remains of perhaps the largest tortoise ever found in Europe. Very few bones of rodents or of birds were found, but a considerable collection of land shells was obtained. Dr. A. S. Woodward, who was in charge of the excavations, has forwarded to the British Museum 47 large cases of fossils.

Bathymetrical Survey of the Fresh-water Lakes of England.—In his presidential address to the Geographical Section of the British Association, at Glasgow, Dr. Hugh R. Mill announced that Sir John Murray and Mr. Laurence Pullar had resolved to complete the bathymetrical survey of the fresh-water lakes of the British Islands. Mr. Pullar has conveyed to trustees a sum of money sufficient to enable the investigation to be commenced at once and to be carried through in a thorough and comprehensive manner. The work is intended as a memorial to Mr. Pullar's son, Mr. Fred Pullar, who had begun the survey of the lochs of Scotland and was drowned in Airthrey Loch in February, 1901, while endeavoring to save others. Sir John Murray has agreed to direct the scheme and to be responsible for carrying it out. All the lakes of the British Islands will be sounded and mapped as a preliminary to the complete limnological investigation. The nature of the deposits, the composition of the water, the rainfall of the drainage areas, the fluctuations in the level of the surface and in temperature, and the plants and animals in the lakes will be carefully noted. Their geological history will also be an object of study. Probably five years will be required to complete the work. Memoirs will be published as the task progresses, giving the complete natural history of the lakes of one river basin.

Damascus and Mecca Railway.—The first section of the railway that is to connect Damascus and Mecca was opened in September. Reports from Constantinople give an interesting account of the opening ceremonies. Thousands of spectators had gathered at Mezireh in the early morning. Sheep were sacrificed and earnest prayers offered for the prompt and successful completion of the railway and for the long life of the Sultan. Then the governor general of Syria, accompanied by sheiks, ulemas, and prominent men of Damascus, boarded the railway carriages, which were decked with Turkish flags, and the train moved off amid the shouts of the enthusiastic Mussulmen. The arrival of the train at the other end of the section, Dera, was likewise greeted by an immense crowd. The Sultan in his palace on the Bosphorus, 1,000 miles away, meanwhile was receiving bulletins telling of the successful opening of the railroad.

Much importance is given by the Turkish papers of the capital to the construction of this route. They credit the Sultan with originating the plan, and state that as soon as the connections between Damascus and Mecca and Medina are completed he will push the construction of the road northward to connect with the Anatolian railway to Constantinople. The political importance of this road cannot be overestimated. It will bind together the provinces from Constantinople to the Gulf of Aden, and enable the Sultan to concentrate his troops at any point between the capital and the gulf, either to quell domestic disorder or resist foreign encroachment.

GEOGRAPHIC LITERATURE

A Gazetteer of Alaska, by Marcus Baker, is in the printer's hands and will soon be ready for distribution by the U. S. Geological Survey. Gazetteers of Cuba and Texas are being compiled by Henry Gannett, also to be published by the Survey.

Reports on Military Operations in South Africa and China, just published by the Military Information Division of the War Department, forms a concise and excellent summary of military events in these respective parts of the world until April 1, 1901. The volume is accompanied by many maps, one of South Africa being especially valuable.

"Boundaries of the United States, States and Territories, with Outline of History of Important Changes," by Henry Gannett, is the title of Bulletin No. 171, recently issued by the U. S. Geological Survey. As the title indicates, the report gives a sketch of the successive boundaries of the United States, of its states and territories, as defined by treaty, charter, or statute. The text is well illustrated by maps and diagrams.

Recent Important Publications by the Bureau of Statistics of the Treasury Department are "National Debts of the World," "Porto Rico, Hawaii, Philippine Islands, Guam, Samoan Islands, and Cuba, their area, population, agricultural and mineral products, imports and exports by countries, and the commerce of the United States therewith," and "Commerce of Mexico, Central and South America, and the West Indies, with share of the United States and other leading nations therein, 1821–1900."

A List of Maps of America in the Library of Congress, by P. Lee Phillips, Chief of the Division of Maps and Charts, has been recently published by the Library of Congress. This very valuable volume is preceded by a list of books relating to cartography. The maps are listed chronologically and include such as were in the Library at the time of the opening of the new building, in November, 1897. Since that date there have been many important editions, which will be included in a supplementary volume.

A bibliography of geographic publications of 1900 is issued as the September number of *Annales de Geographie*. The 908 entries are very comprehensive, including memoirs published in government reports and in the proceedings of societies and in leading periodicals. The volume is edited by Louis Raveneau, with whom are associated some forty eminent geographers, Drs. Wm. M. Davis and R. De Courtney Ward, of Harvard University, representing the United States. Sixty entries are of subjects relating to the United States, a larger number than that of any other country.

The High Plains and Their Utilization is the subject of a report by Willard D. Johnson in the Twenty-first Annual Report of the U. S. Geological Survey and now published in separate form. Mr. Johnson believes that the great plains and arid regions west of the Rockies that form Colorado and New Mexico and the western portions of Nebraska, Kansas, Oklahoma, and Texas were formed by deposits from the mountain chain. Gradually, however, the region

was broken up by streams flowing off the eastern slope. The effect of this erosion is very perceptible in New Mexico and Colorado, and is gradually eating away the portions that remain.

In **The Relation of Sparrows to Agriculture,** by S. D. Judd, Ph. D., are given the results of a careful study of the value of these birds to the farmer and agriculturist. The report is published by the Biological Survey as Bulletin no. 15, prepared under the direction of Dr. C. Hart Merriam. Sparrows are notorious seed-eaters; but as we have not positively known whether they preferred the seeds of weeds or of useful plants, it has been impossible to state definitely whether they injured or helped the farmer. An examination of the stomachs of 4,273 sparrows has shown, however, that sparrows feed chiefly on the seeds of noxious weeds, and are therefore of economic value.

Dr. Charles H. Townsend, of the U. S. Fish Commission, is the compiler and editor of a volume, published by the Commission, giving the dredging and other records of the U. S. Fish Commission steamer *Albatross*, with a bibliography relative to the work of the vessel. The author accompanied most of the cruises of the vessel as naturalist during the last fifteen years. The volume gives the data of 1,786 hauls of the dredge. The dredging covers areas extending from the banks of Newfoundland, along both coasts of North and South America, to Bering Sea, with a few limited areas in the tropical Pacific and between Japan and Kamchatka. The deepest haul was 4,173 fathoms.

The Report of the Secretary of the Smithsonian Institution for 1900 forms a handsome volume of over 700 pages, with 100 full-page plates and maps. It consists of two parts—the report of the Secretary to the Board of Regents, which is a summary of the work of the Institution in all its departments during the past year, and a general appendix, dealing mainly with the advance of knowledge in the different fields of science during the nineteenth century. In the latter part of the report Mr. Langley has included some forty papers summarizing the century's progress in astronomy, aëronautics, chemistry, physics, electricity, geology, geography, biology, and in special lines of study, as malaria and yellow fever. Some of the papers are reprints from memoirs previously published, while others are contributions specially prepared for the report. The volume forms the most important compendium that has yet been published of what man has done during the nineteenth century to advance knowledge.

The most notable memoir in the volume is entitled "The New Spectrum." In this paper Mr. Langley presents a brief summary of his discoveries during twenty years made possible by the invention of the bolometer. Twenty years ago to register the change of temperature of one ten-thousandth of a degree Centigrade was considered remarkable. Today, by means of the bolometer, which has been continuously perfected, it is possible to register one one-hundred-millionth part of a degree.

The immense field of knowledge that is opened by such a study of the sun's heat is appalling. Mr. Langley hints that it may be possible to foretell the seasons, which write their coming upon the records of the spectrum. He concludes the memoir with these words: "We are yet, it is true, far from able to prophesy as to coming years of plenty and famine; but it is hardly too much to say that recent studies of others, as well as of the writer, strongly point in the direction of some such future power of prediction."

NATIONAL GEOGRAPHIC SOCIETY PROGRAM OF LECTURES AND MEETINGS

The Popular Course consisting of thirteen lectures will be delivered in the National Rifles Armory, G street between Ninth and Tenth streets northwest, on Friday evenings at 8 o'clock, commencing November 8 and alternating with the Technical Meetings which will be held in the Assembly Hall of Cosmos Club. Experience has shown that it is unwise to arrange lectures too far in advance, as points of geographic interest shift rapidly; hence only the following dates have been definitely assigned:

November 8.—The Twelfth Census . . . . . Honorable FREDERICK H. WINES
Assistant Director of the Census

As a practical sociologist, Dr. Wines has given special attention to the classes and movements of our population as ascertained by the Census Office, and his lecture will form the first public presentation of interesting facts and conclusions reached during the past year.

November 22.—The Interior of Borneo . . . . . Prof. A. C. HADDON
Oxford, England

The natives of Borneo were the object of study of an expedition dispatched to the island from England in 1898–1899. As leader of this expedition, Prof. Haddon obtained much interesting information about the peoples and country of the little-known interior.

December 6.—Peary's Progress Toward the Pole . . . . . HERBERT L. BRIDGMAN
Vice-President Arctic Club of America

Mr. Bridgman will describe the lands nearest to the Pole discovered by Peary in his recent arctic campaign. Peary is now beginning his fourth consecutive winter in the land of snow and ice.

December 20.—The Trans-Siberian Railway . . . . . Honorable E. J. HILL

As a member of important committees in the House of Representatives, Mr. Hill has taken a practical interest in the extension of American influence, and has just returned from the Orient over the Trans-Siberian railway. His journey gave opportunities for observations of much interest, which will receive first announcement through the Society.

January 3.—The new Mexico . . . . . Honorable JOHN W. FOSTER
Ex-Secretary of State

General Foster was U. S. Minister to Mexico during the years 1873–1880, when the republic was just starting on that phenomenal career of development which raised it to a prominent position among nations and placed its president among the world's great leaders. Twenty years later (in 1901) he revisited the country as its guest; and his observations and impressions will form the theme of his lecture.

January 17.—American Progress and Prospects in the Philippines. General A. W. GREELY
Chief Signal Officer, U. S. Army

General Greely is on his way home from an extended tour among the Philippine Islands. As an example of American progress in the Philippines, it may be stated that 6,000 miles of telegraph lines and cables have been put up in these islands by the U. S. Signal Corps in the three years since the capture of Manila. Telegraph and cable connections are now complete between the northern coast of Luzon and Jolo, 1,000 miles to the south.

Arrangements have also been made for the following popular lectures, at dates to be announced later:

The Appalachian Forest Reserve; Honorable JAMES WILSON, Secretary of Agriculture.
The Warship and its Work; Rear-Admiral W. S. SCHLEY.
Fifty Years of Immigration; Honorable E. F. MCSWEENEY, Asst. Com. Immigration.
Cliff Dwellings of Mesa Verde; Mrs. JOHN HAYS HAMMOND.
Explorations in New York City; Mr. JACOB A. RIIS.
Finland; Mr. GEORGE KENNAN.

Provisional arrangements have been made for lectures on Pacific Cables, Actual and Proposed; Our Coming Oceanic Canal; America Before the Advent of Man; Chinese Problems; Lands and Life in Ocean Depths; Colombia; Danish West Indies; and Afghanistan—the Buffer State.

Regular Meetings of the Society for the reading of technical papers and discussions will be held in the Assembly Hall of Cosmos Club on Friday evenings, at 8 o'clock, commencing November 1, and alternating with the Popular Lectures.

November 1.—Symposium on the Growth and Prospects of the Society . Pres. GRAHAM BELL
Followed by Professor HEILPRIN and others

November 15.—The Lost Boundary of Texas . . . . . MARCUS BAKER
Cartographer, U. S. Geological Survey

November 29.—The Best Isthmian Canal Route . . . . . ARTHUR P. DAVIS
Chief Hydrographer, Isthmian Canal Commission

December 13.—The Northwest Boundary:

C. H. SINCLAIR
U. S. Coast and Geodetic Survey

E. C. BARNARD
U. S. Geological Survey

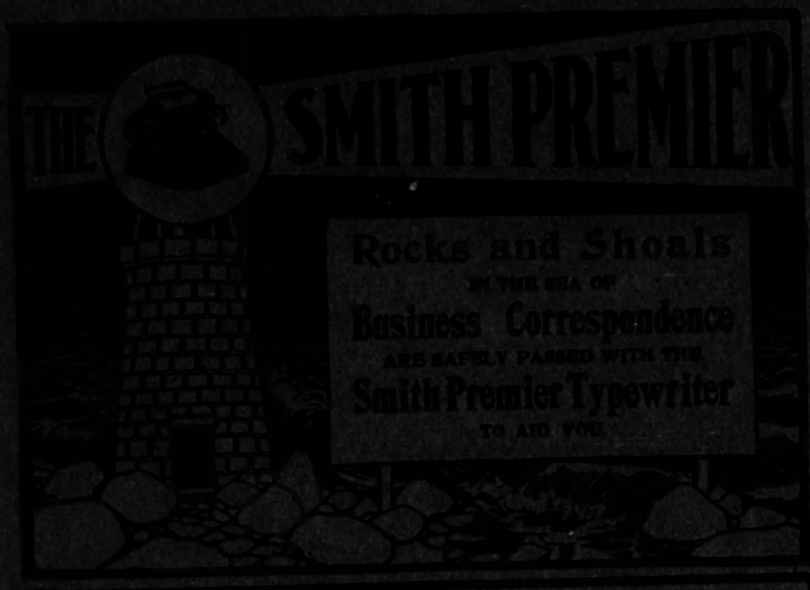
BAILEY WILLIS
U. S. Geological Survey

December 27.—Holiday vacation.

January 10.—Annual Meeting, Reports and Elections.

The Lenten Course of five lectures will be delivered in Columbia Theater, F street near Twelfth, at 4.20 o'clock, on Wednesday afternoons of March 5, 12, 19, and 26 and April 2. As previously announced, the general subject of this course is **"Problems of the Pacific"** the special topics being Japan, Hawaii and Polynesia, Australia and New Zealand, Physical Features of the Great Oceanic Basin, and the Pacific as a Factor in World-Growth.

The program is not yet complete, but it may be confidently stated that each subject will be treated in an authentic and interesting manner.



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